REMARKS

This application has been reviewed in light of the Office Action dated July 29, 2003. Claims 1-7, 16, 19, and 34-40 are pending in this application. Previously withdrawn Claims 22-33 have been cancelled, without prejudice or disclaimer of subject matter. Claims 1-4, 16, and 19 have been amended to define more clearly what Applicant regards as his invention. Claims 34-40 have been added to provide Applicant with a more complete scope of protection. Claims 1, 16, 19, and 35-39 are in independent form. Favorable reconsideration is requested.

The Office Action rejected Claims 1, 7, 16, and 19 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,732,149 (Kido et al.); rejected Claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Kido et al. in view of U.S. Patent No. 6,035,064 (Nakao et al.); rejected Claims 3 and 4 as being unpatentable over Kido et al. in view of U.S. Patent No. 5,680,471 (Kanebako et al.); rejected Claim 5 as being unpatentable over Kido et al. in view of U.S. Patent No. 6,011,862 (Doi et al.); and rejected Claim 6 as being unpatentable over Kido et al. Applicant respectfully traverses these rejections.

Applicant submits that amended independent Claims 1, 16, and 19, together with the remaining claims dependent thereon, are patentably distinct from Kido et al. at least for the following reasons.

The aspect of the present invention set forth in Claim 1 is a method for setting an area in a radiation image. In a discriminating step is discriminated, as a passing-through area in the radiation image, an area where X-rays are directly radiated on an X-ray detection means without passing-through an object. In the object discriminating step is discriminated an area obtained by eliminating the area discriminated as the passing-through area from the radiation image, as an object image. In the calculating step is calculated a

projection from the object image discriminated in the object discriminating step, and in the setting step, an area in the radiation image is set based on the projection.

Among the notable features of Claim 1 are the discriminating step, object discriminating step, and calculating step, as described above. A method for setting an area in a radiation image having these features can stably extract the target area of the object without any influence of the passing-through area, by discriminating the area (passing-through area) where the X-rays are directly radiated on the X-ray detection means without passing-through the object, and eliminating the passing-through area. More specifically, the projection calculated from the object extracted by eliminating the passing-through area is analyzed, and the target area in the object can be stably extracted.

Kido et al., as understood by Applicant, relates to an apparatus for extracting an irradiation field region from a radiation image. Kido et al. discusses that the radiation field is first recognized, the projection is created from the radiation field, and the created project is analyzed, whereby the target area is extracted based on the analyzed result. However, Applicant has not found anything in Kido et al. that would teach or suggest the features of the discriminating step, object discriminating step, or calculating step, as recited in Claim 1. In addition, since the passing-through area in the Kido et al. radiation field is different from that recited in Claim 1, the shape of the calculated projection is also different from that obtained using the method of setting a radiation image as recited in Claim 1. Consequently, in Kido et al., accuracy in extracting the target area is low as compared with the method for setting an area in a radiation image having the features recited in Claim 1.

Accordingly, Applicant submits that at least for these reasons, Claim 1 is patentable over Kido et al.

Independent Claims 16 and 19 are apparatus and storage medium claims,

respectively, that correspond to method Claim 1, and are believed to be patentable for at least the same reasons as discussed above in connection with Claim 1.

New Claims 35-37 are method, apparatus, and storage medium claims, respectively, that correspond to each other, and along with new apparatus Claim 39, are believed to be allowable at least because they include the feature of a projection calculation step of calculating (or a unit adapted to calculate) a sum total of pixel values by adding the pixel values of pixels included in an area linearly connecting from the contour line of one side to the contour line of the other side in a predetermined direction. In addition, new Claim 38 is believed to be allowable at least because it includes the features of a discriminating unit, object extracting unit, and calculating unit, which respectively perform the steps as recited in Claim 1.

A review of the other art of record, including Nakao et al., Kanebako et al., and Doi et al., has failed to reveal anything that, in Applicant's opinion, would remedy the deficiencies of the art discussed above, as applied against the independent claims herein. Therefore, those claims are respectfully submitted to be patentable over the art of record.

The other rejected claims in this application depend from one or another of the independent claims discussed above, and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual consideration or reconsideration, as the case may be, of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

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